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Notes on a Miscellaneous Collection of Mallophaga from Mammals.

By JOHN HOWARD PAINE, Stanford University, California.

(With Plate XX.)

Trichodectes mephitidis Osborn.

Numerous specimens from *Mephitis mephitis* (Stanford University), *Mephitis machura* (Fairbanks, Arizona), and a skunk (Choro, Bolivia). This species is very closely allied to *T. castoris* Osborn, of which it may be merely a variety, a difference in host being a rather slight specific character.

Trichodectes geomydis Osborn.

Specimens from *Thomomys bottae*, *T. talpivivarus* (Monterey, Cal.) and a ground squirrel (Santa Rosa, Cal.).

Trichodectes setosus Giebel.

Several individuals of this large species from the western porcupine, *Erethizon epixanthus* (Tuolumne, Cal.).

Trichodectes parallelus Osborn.

Four specimens from the red deer (Michigan Agricultural College).

Trichodectes subrostratus Nitzsch.

Numerous specimens from a domestic cat (Stanford University), also collected in large numbers from a lynx, *Lynx rufus* (San Gregorio, Cal.). It is not known whether the species generally infests the lynx or not, but probably this is a case of "straggling."

Trichodectes forficula Piaget.

Four specimens from a wild dog, *Cyon dukkhensis* (Dhikala, Ghurwal District, at the base of the West Himalayas, India). This species is described by Piaget from a deer, *Cervus porcinus*, from the Zoological Gardens of Rotterdam. This case is not so easily explained by "straggling."

Trichodectes climax Nitzsch.

Collected in large numbers from an Angora goat (Palo Alto, Cal.).

Trichodectes scalaris Nitzsch.

Found in large numbers on calves.

Trichodectes parumpilosus Piaget.

Abundant on the horse.

Trichodectes octomaculatus n. sp. (Pl. XX, Fig. 1.).

A large number of specimens, apparently all female, from the western raccoon, *Procyon psora* (Stanford University). This form is easily recognizable by the eight distinct chestnut blotches on the head, these being the only dark markings on the insect.

Description of female: Head broader than long with front broadly rounded though slightly flattened on the sides, with a clear space in the middle not excised; the antennal bands turn inward just as they reach the central clear portion and end in a chestnut colored blotch; there is a similar blotch on the margin well in front of the small trabecular projections. There are several minute hairs on the frontal margin, two on each side of the central clear portion, one between the two blotches and another near the posterior frontal blotch; also a still smaller one on the trabecular-like projection and four on the dorsal surface, two of which occur close together just behind the central clear portion while the others arise, one on each side, near the margin close behind the posterior blotch. Temples

rounded, eye prominent with an ocular blotch similar to those in front, only smaller; a minute hair on the eye with another close behind it and five more occurring on the temples, being placed quite regularly around to the prominent occipital blotches; one rather long heavy hair on the temple arising at the point where it meets the prothorax; occiput slightly sinuous, without marginal hairs. Antennae quite long, the terminal segment longest. (Fig. 1a). General color of head and thorax pale yellowish brown.

Prothorax short, slightly darker than head with divergent sides and posterior margin convex; a minute hair on each lateral margin and two longer ones on the posterior margin, one on each side of the meson. Metathorax also short but considerably wider than prothorax; a rather prominent hair on the acute anterior angle and two similar ones behind, on the surface; sides strongly convergent, with obtuse posterior angles; posterior margin concave, without hairs. Legs short, rather heavy with prominent claw and numerous hairs.

Abdomen elliptical, slightly narrowed posteriorly; color pale to transparent. Two hairs near the meson on each segment and two others on each side midway between the meson and lateral margin; several hairs in each posterior lateral angle. Margin thickened with a continuous transparent band, enlarged at the sutures. Last segment notched, with three hairs on each angle. Prominent spiracles on the lateral margins of segments 2, 3 and 4.

	Length	Width
<i>Measurements:</i> Female	1.32	
Head .....	.30	.42
Thorax .....	.16	.44
Abdomen .....	.86	.72

***Trichodectes minutus* n. sp. (Pl. XX, Fig. 4).**

Three specimens, one male and two females, from a weasel (*Putoris noveboracensis*) were collected by H. E. Ewing (Marshall, Ill.). This species resembles Nitzsch's *T. retusus* from *Mustela vulgaris* and *M. erminea*, but, unlike that species, there is a striking difference in the antennae of the two sexes. Osborn has recorded *T. retusus* from a weasel (Ames, Iowa).

Description of Male: Color pale yellow. Head sub-pentagonal, front angular, rather deeply incised with a clear space behind the incision; prominent, trabeculae-like processes in front of the antennae; antennal bands prominent, extending to the frontal incision where they turn back, forming an acute angle. Antennae large, reaching posteriorly beyond the head; first segment large and nearly as long as the following two, of which the last is a little longer; several short thick spines on the tip of the distal segment (Fig. 4c). Temples prominent, broadly, not angularly rounded as in *T. retusus*, with

several short hairs and one rather long one; occiput convex, slightly emarginate on each side where the occipital bands meet the margin. Head widest across the trabeculae-like processes.

Thorax long; prothorax trapezoidal, with diverging sides and straight posterior margin; a hair in each posterior angle and two on the posterior margin. Metathorax shorter and broader than prothorax with anterior angles broadly rounded, sides converging and posterior margin concave; a short hair on the lateral margin and two longer ones on each side on the dorsal surface; also two near the meson. Legs poorly developed.

Abdomen subovate, widest at the second and third segments and regularly diminishing to the seventh; last segment protruding with two rather long hairs and several shorter ones; also a row of prominent hairs across each of the other segments, those in the mesal region being more closely set. Color pale yellow.

Female. Antennae short (Fig. 4a), ordinary, with segments of nearly equal length. Trabeculae-like processes longer and more acute than in the male. Abdomen more developed, subquadrilateral; widest at second segment and diminishing slightly to the sixth, with seventh segment narrowed and the last narrow, bilobed; two chitinated hook-like processes apparently arising from the sixth segment (Fig. 4b).

Measurements: ♀ .96; ♂ .80.

	Length		Width	
	Male	Female	Male	Female
Head .....	.24	.26	.28	.32
Thorax .....	.14	.16	.24	.28
Abdomen .....	.42	.54	.36	.40

***Trichodectes californicus* Chapman.** (Pl. XX, Fig. 2).

With some hesitation I refer several specimens, male and female, from *Dipodomys merriami*, a pocket rat (Arizona), to this species. The females of the specimens in hand are very similar to *T. californicus*, but have fewer hairs on the thorax and abdomen, less than half as many in the case of the metathorax. The male, which has heretofore been unknown, differs greatly from the female in the shape of the head and in the antennae. The temples are nearly square, with two short broad spines on the posterior angle. The antennae are very striking, being long enough to reach well back on to the abdomen; first joint large, deep set, a little longer than either of the succeeding joints, with a prominent tooth-like appendage midway on the inner side; second and third joints long and narrow and about equal in length; two short heavy teeth and several longer spines on the tip of the last segment (Fig. 2a).

Gyropus ovalis Nitzsch.

Specimens of this species and of the following from the guinea pig, *Cavia cobaya*, sent in by H. E. Ewing (Urbana, Ill.). (Also from Cambridge, Mass., by S. S. Berry.)

Gyropus gracilis Nitzsch.

Many specimens (Urbana, Ill.; Cambridge, Mass.).

Gyropus bicaudatus n. sp. (Pl. XX, Fig. 3).

A large series of specimens taken by W. M. Mann from a wild guinea pig (*Cavia cutleri*), collected by Dr. W. E. Castle in Peru. This species closely resembles in general habit Nitzsch's *G. gracilis*, but is strikingly different in the form of the last abdominal segment in the male. In the present species this segment narrows and gives rise to two prominent appendages, each bearing a strong spine, giving the insect a very characteristic appearance. This difference is shown in Figs. 3b and 3c, the former being drawn from specimens of *G. gracilis* Nitzsch.

Description of male: Entire insect pale, often white or transparent. Head closely resembling that of *G. gracilis*, Nitzsch. Antennal, ocular and temporal bands faint, continuous, marginal, enlarged slightly around the lateral emarginations; numerous minute hairs on the margin of the rounded clypeus and a row across on the surface near the margin; also several hairs on the divergent sides before the lateral emarginations and on the convergent temples. Thorax narrower than head, prothorax almost circular, with posterior margin slightly angled on the meson; metathorax quadrilateral, sides slightly rounded. Abdomen long and narrow with sides, between the second and sixth segments, almost straight; last two or three segments tapering, the last being produced into two appendages (Figs. 3 and 3c), each appendage bearing a stout spine; a short fine hair on the lateral margin of this segment just above the appendage. In old specimens a faint transverse band is visible across each segment; a row of extremely minute spines or prickles across each segment.

Measurements: ♂ 1.16; ♀ 1.22.

	Length		Width	
	Male	Female	Male	Female
Head .....	.18	.18	.16	.18
Prothorax .....	.10	.10	.12	.14
Metathorax .....	.12	.12	.12	.14
Abdomen .....	.76	.82	.28	.36

Menopon jenningsi Kellogg & Paine.

A female specimen collected by W. M. Mann from a wild guinea pig (*Cavia cutleri*), brought from Peru by Dr. W. E. Castle. This is the second record of this peculiar species and is of special interest, coming as it does from a wild form of *Cavia*, thus more certainly establishing the guinea pig as its typical host. The type is from the tame *C. cobaya*.

EXPLANATION OF PLATE XX.

- Fig. 1. *Trichodectes octomaculatus* Paine, n. sp. ♀.
Fig. 1a. *Trichodectes octomaculatus* Paine, antenna of ♀. (Enlarged).
Fig. 2. *Trichodectes californicus* Chapman ♂.
Fig. 2a. *Trichodectes californicus* Chapman, tip of last segment of antenna of ♂.
Fig. 3. *Gyropus bicaudatus* Paine, n. sp. ♂.
Fig. 3a. *Gyropus gracilis* Nitzsch, last segment of ♂.
Fig. 3b. *Gyropus gracilis* Nitzsch, last segment of ♂ (enlarged).
Fig. 3c. *Gyropus bicaudatus* Paine, last segment of ♂ (enlarged).
Fig. 3d. *Gyropus bicaudatus* Paine, last segment of ♀.
Fig. 4. *Trichodectes minutus* Paine, n. sp. ♂.
Fig. 4a. *Trichodectes minutus* Paine, antenna of ♀.
Fig. 4b. *Trichodectes minutus* Paine, last segment of ♀.
Fig. 4c. *Trichodectes minutus* Paine, tip of last segment of antenna of ♂.
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Eupithecias that appear to be undescribed (Lepid.).

By RICHARD F. PEARSALL, Brooklyn, New York.

(Continued)

The following species I fear I have distributed to some of my friends, under the name of *multiscripta*, Hulst. I had at that time, a single specimen of the latter from Colorado, verified by comparison with the type, but I thought these were possibly but a variation of it. Later, when more material came to me from both localities, I found that we had in the Southwest another large species, very like unto *multiscripta*, in size, shape and color, which I have called

Eupithecia perillata, n. sp.

Expanse 28-30 mm. Palpi long, stout, gray, tipped with white. Front gray, bordered narrowly along orbits, and over clypeus with white. Antennae rather stout and ciliate in both sexes, gray, barred finely with black.